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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/728,435 | 12/01/2000 | Klaus Hartig | 44046.203.143.2 | 8579 |

7590

07/15/2003

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EXAMINER

PIZIALI, ANDREW T

ART UNIT

PAPER NUMBER

1775

DATE MAILED: 07/15/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

A94

Office Action Summary

Application No.

09/728,435

Applicant(s)

HARTIG ET AL.

Examiner

Andrew T Piziali

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1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,7-13,15-24 and 26-45 is/are pending in the application.
- 4a) Of the above claim(s) 40-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7-13,15-24 and 26-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 April 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>11</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Drawings

1. The corrected or substitute drawing was received on 4/3/2003. The examiner accepts this drawing.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 1-2, 4-5, 7-13, 15, 18-24, 26, 29-34 and 36-39 are rejected under 35 U.S.C. 102(e) as being anticipated by USPN 6,090,481 to Depauw et al. (hereinafter referred to as Depauw).

Regarding claims 1-2, 4-5, 7-13, 15, 18-24, 26, 29-34 and 36-39, Depauw discloses a coating on a substrate having a surface comprising from the substrate surface outwardly an inner dielectric layer, a first infrared reflective layer, an intermediate dielectric layer, a second infrared reflective layer, and an outer dielectric layer (column 3, lines 26-39). Depauw discloses that each dielectric layer can be a composite layer formed of successive subsidiary layers of different compositions from each other (column 5, lines 31-40 and Table A). Depauw discloses that the dielectric materials include zinc oxide and silicon nitride (column 5, lines 23-30). Depauw

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discloses that the physical thickness of each layer of a composite layer may be no more than about 225Å each and each optical thickness may be no more than 450Å (Table A). Therefore, Depauw discloses a coating carried by a substrate comprising an intermediate dielectric stack comprising zinc oxide/silicon nitride/zinc oxide/silicon nitride/zinc oxide.

Depauw discloses that the layers are preferably applied by sputtering (column 5, lines 60-61). The applicants disclose in the specification that zinc oxide is a polycrystalline material when applied in thin films via sputtering (see specification page 12, lines 17-18). The applicants also disclose that thin layers of silicon nitride can be thought of as substantially amorphous even after tempering (see specification page 12, lines 22-23). Therefore, it appears that the zinc oxide layers of Depauw are polycrystalline and the silicon nitride layers of Depauw are amorphous.

Regarding claims 11, 22 and 33, Depauw discloses that a sacrificial layer may be disposed between the first infrared reflective silver layer and the intermediate dielectric layer (column 5, lines 11-12 and lines 46-54).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 16-17, 27-28 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,090,481 to Depauw.

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Regarding claims 16-17 and 27-28, Depauw does not mention a specific embodiment wherein each of the layers of the first dielectric have an optical thickness greater than the optical thickness of any of the layers of the second dielectric, but it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the thicknesses of the layers, because it is understood by one of ordinary skill in the art that the layer thicknesses determine properties such as transmittance, emissivity, and color and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claims 17, 28 and 35, Depauw does not mention a specific embodiment wherein each of the first dielectric layers has a physical thickness between about 160A and about 225A and each of the second dielectric layers has a physical thickness of between 100A and about 150A, but it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the thicknesses of the layers, because it is understood by one of ordinary skill in the art that the layer thicknesses determine properties such as transmittance, emissivity, and color and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Response to Arguments

6. Applicant's arguments filed 5/19/2003 have been fully considered but they are not persuasive.

The applicant asserts that DePauw does not anticipate the currently claimed article because DePauw fails to appreciate the benefit of providing alternating intermediate layers of

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crystalline and amorphous dielectrics. The fact remains DePauw teaches alternating layers of polycrystalline zinc oxide and amorphous silicon nitride, having thicknesses which meet the claimed parameters. The discovery of an undisclosed property of a known material does not provide a patentable distinction over the art of record.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

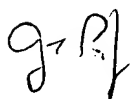
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Piziali whose telephone number is (703) 306-0145. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (703) 308-3822. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-5665.



atp

July 14, 2003

Andrew T Piziali
Examiner
Art Unit 1775


DEBORAH JONES

SUPERVISORY PATENT EXAMINER